

ABSTRACT

The present invention provides a tool assembly for use in field applications to monitor at least one condition in a well or other hole. The tool assembly may include a computing unit for directing operation of the tool assembly and may be sized to be operable in a hole having a diameter of 1 inch, and in some cases even smaller. In one aspect, the tool assembly is designed to significantly conserve power. Sensor readings may be taken at different schedules to conserve power when frequent readings are not required. Also, internal electronics of the tool assembly can be operated at a low voltage.

In one aspect, the tool assembly is assemblable by simple rotatable engagement of the components, with electrical interconnections being made automatically by the rotatable engagement without keying of components. In another aspect, the tool assembly is networkable with other like tool assemblies and monitorable from a central location. In yet another embodiment, the tool assembly may include a tool bundle with a plurality of different sensor capabilities useful as a multi-parameter probe when tool diameter is not a big concern.